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EV Program
Witness: Sarah L.K. Lange
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Case No.: ET-2018-0132
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MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

TARIFF/RATE DESIGN

REBUTTAL TESTIMONY

OF

SARAH L.K. LANGE

**UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI**

CASE NO. ET-2018-0132

*Jefferson City, Missouri
October 2018*

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OF

SARAH L.K. LANGE

**UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI**

CASE NO. ET-2018-0132

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1 **REBUTTAL TESTIMONY**

2 **OF**

3 **SARAH L.K. LANGE**

4 **UNION ELECTRIC COMPANY,**
5 **d/b/a AMEREN MISSOURI**

6 **CASE NO. ET-2018-0132**

7 Q. Please state your name and business address.

8 A. My name is Sarah L.K. Lange and my business address is Missouri Public
9 Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

10 Q. Who is your employer and what is your present position?

11 A. I am employed by the Missouri Public Service Commission (“Commission”)
12 and my title is Regulatory Economist III, Tariff and Rate Design Department of the
13 Commission Staff Division.

14 Q. What is your educational background and work experience?

15 A. I have testified in numerous cases before this Commission on the subjects of
16 rate design, class cost of service, transmission, and other tariff and tariff design issues.
17 I completed a Bachelor of Science degree in Historic Preservation from Southeast Missouri
18 University in Cape Girardeau, Missouri, and a Juris Doctorate degree from the University of
19 Missouri, Columbia. I have been employed by the Missouri Public Service Commission since
20 May 2006. Prior to transferring to the Economic Analysis Section in July 2013, I was a
21 Senior Counsel in the Staff Counsel’s Office. A copy of my credentials and case participation
22 is attached as Schedule SLKL-r1.

1 **EXECUTIVE SUMMARY**

2 Q. Does Ameren Missouri accurately estimate the impact to ratepayers due to its
3 proposed Charge Ahead – EV program?

4 A. No. While there are a number of specific concerns detailed below, the central
5 issues are (1) Ameren Missouri’s assumption of annual rate cases to accrue any benefit of
6 additional sales under this program to non-participating ratepayers, and (2) the poor quality of
7 Ameren Missouri’s estimates of net margin resulting from the proposed program.

8 Q. Does Ameren Missouri reasonably estimate the revenues from chargers
9 installed under their program?

10 A. No.

11 Q. Does Ameren Missouri reasonably estimate the system costs for serving
12 chargers installed under their program?

13 A. No.

14 Q. Does Ameren Missouri reasonably estimate the revenues from accretive energy
15 use for EV charging enabled by chargers installed under their program?

16 A. No.

17 Q. Does Ameren Missouri reasonably estimate the system costs for serving
18 accretive energy use for EV charging enabled by chargers installed under their program?

19 A. No.

20 Q. Does Ameren Missouri reasonably estimate how the revenues and costs –
21 whether directly or indirectly enabled – associated with the Charge Ahead - EV Program will
22 change over time?

23 A. No.

1 Q. Does Ameren Missouri reasonably estimate how the revenues and costs –
2 whether directly or indirectly enabled – associated with the Charge Ahead - EV Program will
3 impact the rates that result from future rate cases?

4 A. No.

5 Q. Does Staff recommend rejection of the Charge Ahead - EV Program?

6 A. Yes. Staff recommends the Charge Ahead - EV Program, as proposed be
7 rejected. Staff supports promulgation of a reasonably designed make-ready tariff to subsidize
8 the line extension costs associated with the installation of separately-metered electric vehicle
9 charging facilities under specific circumstances. In the alternative, if Ameren Missouri can
10 provide reasonable estimates of program costs associated with specific measures within the
11 Charge Ahead - EV Program, Staff does not oppose creation of a better-designed program to
12 optimize benefits for all ratepayers at a given level of revenue requirement impact.

13 **RATE DESIGN AND RATE CASE TIMING**

14 Q. Do Ameren Missouri's projections account for the possibility of Time of Use
15 rates influencing the level of net revenue received by each charger?

16 A. No. While Time-of-Use rates may have little or no impact on the timing of
17 workplace charging or corridor charging, it is reasonable to assume that charging that occurs
18 at a residence (whether on the Residential or SGS schedule) will benefit from a time-
19 differentiated rate design. Ameren Missouri has made no effort to estimate how that revenue
20 benefit for the customer will reduce the net margins that they have estimated. In general, one
21 would expect the net margins to significantly decrease.

22 Q. Do net revenues generated by EV charging benefit other ratepayers?

1 A. In the near term, they do not. For example, for Mr. Will's assumption that
2 a \$1,500 "construction allowance" per EV will pay for itself in five years, Ameren Missouri
3 would need to file a rate case at the end of year 1, to take effect at essentially the end of
4 year 2, to incorporate those additional revenues into the billing determinants used to calculate
5 rates. Even then, it would take until just before the end of year 7 for the calculation
6 Mr. Will's provides to carry through. Meanwhile, shareholders would have received the
7 benefit of 23 months of additional revenues even under the most customer-friendly example.
8 This is in addition to the immediate relative increase to FAC rates that results from an
9 increase in energy sales. And finally, Mr. Will's assumption fails to consider that
10 Ameren Missouri's September 1, 2018 election of Plant in Service Accounting (PISA) in
11 File No. EO-2019-0044 means Ameren cannot change rates before April 1, 2020.

12 Q. Does Mr. Wills attempt to acknowledge the cost of Renewable Energy
13 Standard compliance associated with the load growth he projects?

14 A. No. He does not. Because the RES requirements are calculated as a
15 percentage of kWh of energy sales, additional energy sales will cause increased costs of
16 complying with the RES, all else being equal.

17 **CALCULATIONS SUPPORTING PROGRAM DESIGN**

18 Q. For each measure in the proposed Charge Ahead - EV Program, has the
19 company provided an estimate of (1) the incentive dollars to be expended, (2) the program
20 costs budgeted, (3) the estimated direct net revenues from the incented charging equipment,
21 (4) the accretive estimated net revenues, and (5) an estimate of the revenues net of the
22 program and incentive costs?

1 A. No. On page 25 of his Direct Testimony, Mr. Wills presents estimated gross
2 revenues for charging one EV for one year on the Residential Rate schedule. On page 26 he
3 presents estimated incremental costs associated with charging one EV, and he presents an
4 estimated incremental margin per EV of \$259/year. He then estimates the annual revenue
5 requirement of EV charging equipment during its first five years of use to be \$0.178/dollar
6 spent. He then divides the margin he calculated by the revenue requirement impact he
7 estimated to calculate an “extension allowance” of \$1,459 per EV.

8 Q. What is unreasonable about this process?

9 A. There are a number of problems with Mr. Will’s analysis. First, Staff has
10 significant concerns, discussed in greater detail below, with the assumptions that underlie Mr.
11 Will’s calculation of a net margin of \$259/EV per year. Second, relating his net margin
12 assumption to the revenue requirement impact requires an assumption that a rate case will
13 occur every year in order for ratepayers to get the benefit of the net margin. Third, his
14 calculation works backwards to create an “extension allowance” but does not actually tie the
15 allowance back to the program design, as is illustrated below.

16 Q. What relationship does the Company draw from the calculations above to
17 its \$11 million requested budget?

18 A. None. Mr. Wills simply states the requested budget of \$11,000,000, and
19 rounds up his \$1,459 per EV calculation to \$1,500, and states that these values support that
20 the program will cause 7,500 EVs to exist and charge in Ameren Missouri’s service territory
21 and create direct rate benefits for all Ameren Missouri customers.

ESTIMATED NET REVENUES AND PROGRAM DESIGN

Q. What is a reasonable estimate of the revenues from chargers installed under the programs proposed?

A. Using current rates, and based on the values provided in Ameren Missouri's 2019 MEEIA Application for the avoided costs projected in Ameren Missouri's 2017 IRP, the annual revenues in excess of system costs estimated to be produced from an average EV is provided below, by class.

<u>Estimated Residential Additive Margin Per EV</u>	
Miles per Day	30
Miles / kWh	3.39
kWh / Month	265
Average Bill Change / Year	\$ 261.77
Average Cost Increase / Year	\$ 195.27
Average Margin per EV / Year	\$ 66.50

<u>Estimated SGS Additive Margin Per EV</u>	
Miles per Day	30
kW/ Mile	3.39
kWh / Month	265
Average Bill Change / Year	\$ 296.81
Average Cost Increase / Year	\$ 195.27
Average Margin per EV / Year	\$ 101.54

<u>Estimated LGS Additive Margin Per EV</u>	
Miles per Day	30
kW/ Mile	3.39
kWh / Month	265
Average Bill Change / Year	\$ 275.47
Average Cost Increase / Year	\$ 168.30
Average Margin per EV / Year	\$ 107.17

1 Q. Given Ameren Missouri's representations that serving EV load will not require
2 additions to the distribution system, have you prepared a version of estimates that do not
3 reflect incremental distribution costs?

4 A. Yes. Those values are provided below:

5

Estimated Residential Additive Margin Per EV	
Miles per Day	30
Miles / kWh	3.39
kWh / Month	265
Average Bill Change / Year	\$ 261.77
Average Cost Increase / Year	\$ 154.54
Average Margin per EV / Year	\$ 107.23

6

7

Estimated SGS Additive Margin Per EV	
Miles per Day	30
kW/ Mile	3.39
kWh / Month	265
Average Bill Change / Year	\$ 296.81
Average Cost Increase / Year	\$ 154.54
Average Margin per EV / Year	\$ 142.28

8

9

Estimated LGS Additive Margin Per EV	
Miles per Day	30
kW/ Mile	3.39
kWh / Month	265
Average Bill Change / Year	\$ 275.47
Average Cost Increase / Year	\$ 137.75
Average Margin per EV / Year	\$ 137.72

10

11 Q. What specific concerns does Staff have with Mr. Will's estimated margin
12 of \$259 per EV?

13 A. The usage assumed, rate assumed, and incremental cost assumed by Mr. Wills
14 are unreasonable.

1 Q. What usage per EV per month did Mr. Wills assume, and what is a more
2 reasonable value?

3 A. Mr. Wills' usage per month calculation is 342 kWh. This is based on an
4 assumption that an EV that gets 3 miles per kWh will be driven 40 miles a day, every day, and
5 that charging will not be split between, for example, workplace charging and home charging.

6 Ameren Missouri based their miles per kWh information on existing EVs
7 within their service territory, which is inconsistent with an estimation procedure for new EV
8 adoption. Based on 2018 EV performance, a usage level of 3.39 kWh per mile is more
9 reasonable. Ameren Missouri provided no support for the 40 miles per day value. At least in
10 the short term, this assumption is unreasonably high. Replacing the 342 kWh per month
11 assumption used by Mr. Wills with the more reasonable assumption of 265 kWh per month
12 reduces Mr. Will's estimated margin calculation from \$259 per vehicle to \$199 per vehicle.

13 Q. What rate schedule did Mr. Will's assume charging would occur under?

14 A. Mr. Wills assumed that all EV charging, both directly enabled and accretive,
15 would occur on the Residential rate schedule.

16 Q. Why is it unreasonable to assume all charging would occur on the residential
17 rate schedule?

18 A. There are several reasons. First, Ameren Missouri's tariff sheet 54.3 includes
19 provision 5 of the 1(M) residential rate schedule, which defines uses to which the residential
20 service rate is inapplicable. Due to this limitation, Staff is unaware of a scenario under which
21 even the residential-based multifamily electric vehicle charging would occur on
22 Ameren Missouri's residential rate schedule. In contrast, Mr. Wills bases his \$259 value on

1 charging occurring exclusively on the residential rate, including the first block of the
2 residential rate, which is for low levels of energy consumption.

3 Second, the remaining programs are not residential in nature, and would likely
4 occur on an LGS or even SPS rate schedule.

5 Finally, even if Ameren Missouri takes the position that because of the
6 availability of charging incented by the program people will purchase an EV they otherwise
7 wouldn't have, and charge at work when they're at work, and charge at home when they're at
8 home, the analysis provided does not account for the split in the kWh required to charge. For
9 example, if Mr. Wills assumes I am charging an EV to provide 40 travel miles at home each
10 day, he would also be estimating that I am charging the same EV to provide 40 travel miles at
11 work each day. The resulting 80 mile per day estimate is unreasonable.

12 Q. What incremental costs did Mr. Wills assume in his analysis?

13 A. Mr. Wills used capacity costs of \$25.29 per MW-day, and energy costs
14 f \$24.50/MWh. Mr. Will's assumes that 20% of the demand will coincide with system peak.

15 Q. Are these assumptions consistent with Ameren Missouri's 2019 MEEIA
16 Application?

17 A. No. Ameren Missouri's MEEIA application provides the avoided costs
18 projected in Ameren Missouri's 2017 IRP. For 2019 Ameren Missouri projected energy costs
19 of \$26/MWh, capacity costs of \$20 kW-year, and incremental transmission and distribution
20 costs of \$6/kW-year, and \$17/kW-year, respectively. These costs are projected to steadily
21 increase to 2037 levels of \$55/MWh for energy, \$101/kW-year for capacity, \$8/kW-year for

1 transmission, and \$24/kW-year for distribution. Mr. Will's EV analysis does not reflect
2 transmission and distribution costs at any level.¹

3 Q. Is it reasonable to assume that 20% of the EV demand will coincide with the
4 system peak?

5 A. While it depends on the program, in general, no, this is not a reasonable
6 assumption. For example, for workplace charging to have a reasonable utilization rate, one
7 would assume that two vehicles would charge at each port per day – one employee charging
8 upon arrival to work in the morning, and another employee switching into the EV charging
9 spot after lunch. This second round of EV charging would likely coincide with Ameren
10 Missouri's system peak. And absent this second round of EV charging, the revenues from the
11 charging infrastructure would be overestimated. Using Mr. Will's value of \$25.29/MW-day,
12 this increases Mr. Will's estimated capacity costs from \$14 to \$69. The appropriateness
13 of the range of estimate depends on the likely utilization patterns of the specific
14 measures installed.

15 Q. What is a reasonable estimate of net revenues from workplace charging?

16 A. Depending on the size of the underlying business and whether the charging
17 would be separately metered or not, if either an EV owner did all of their charging at the
18 workplace or two EV owners split usage of a port, a reasonable estimate is approximately
19 \$101– \$142 per port per year. Similar revenues could probably be expected from publicly
20 available charging at a shopping center or commuter parking lot.

21 Q. What is a reasonable estimate of net revenues from residential charging?

¹ Staff's reference to these values in this case is not intended to reflect a position on the reasonableness of the values and methods Ameren Missouri relied on in Ameren Missouri's MEEIA application.

1 A. If one assumes that an EV owner charges both at their workplace and at home,
2 a reasonable estimate of the margin from the residential portion of the charging is
3 approximately \$33-54 per EV per year. While it would not be consistent with
4 Ameren Missouri's program design to assume that all of an EV owner's charging associated
5 with the Charge Ahead - EV Program would occur at home, home charging that accounts for
6 nearly all of a given customer's EV charging would produce annual net revenues
7 of roughly \$66-107.²

8 Q. What is a reasonable estimate of net revenues from multi-family charging?

9 A. Assuming all charging occurs at the residence, net revenues of approximately
10 \$101-142 per vehicle.

11 Q. How does Ameren Missouri's proposal account for these differences in
12 projected revenues in its program design?

13 A. It does not. Ameren Missouri does not attempt, for example, to assume two
14 employees will share a workplace charger that has been paid for as part of
15 Charge Ahead - EV for half of their charging, and that the remaining charging will occur at
16 each employees home. Such an analysis would provide **direct** net revenues of
17 approximately \$107-137 per year, and indirect or accretive revenues of
18 approximately \$66-107 per year, against which to weigh budgeted incentive levels and
19 program costs.

20 Q. As an alternative to rejection, how does Staff recommend the Charge Ahead -
21 EV Program be modified?

² For example, a workplace EV charger enabled by Ameren Missouri's program would account for some of the charging of the EVs enabled by that charger's existence.

1 A. Staff recommends that Ameren Missouri prepare a specific budget for each
2 measure, identifying the number of ports to be installed, and the program costs associated
3 with each measure. Ameren Missouri should also provide an estimate of the accretive
4 charging it estimates to be enabled by the subsidized charger installation, and identify any
5 public policy benefits associated with any specific measure.

6 Q. Does Staff support approval of Ameren Missouri's line extension tariffs as
7 submitted in the initiation of this docket?

8 A. No. Staff is generally supportive of adopting the net revenue approach for
9 meren Missouri's line extension policy, but a number of refinements are necessary for
10 reasonable implementation of the net revenue approach. Specifically,

- 11 1. Staff recommends that Ameren Missouri work with Staff and other interested
12 parties to ensure that language is clear and understandable and achieves
13 expected outcomes that are similar to the process described in the related
14 KCPL and GMO tariff provisions;
- 15 2. Staff recommends that the net revenue calculation be based on five years of
16 expected revenues and revenue requirements;
- 17 3. Staff recommends that Ameren Missouri explicitly state or that the
18 Commission order that this investment in line extensions is associated with
19 new revenue and so does not meet the definition of "qualifying plant" and so
20 would not receive PISA treatment;
- 21 4. Staff recommends that Ameren Missouri document why a customer is deemed
22 "speculative" when that occurs and notify the customer that is why they have
23 higher upfront costs;
- 24 5. Staff recommends that Ameren Missouri document customer contribution
25 values by voltage and service classification, and other elements related to cost
26 assignment within a class cost of service study;

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Sarah L.K. Lange

- 1 6. Staff recommends that five years after implementation, Ameren Missouri
2 compile a report including over/underestimated costs, how many startups make
3 it to year 5, and other applicable metrics to evaluate the reasonableness of the
4 tariff;
- 5 7. Staff recommends rejection of the NEII;
- 6 8. Staff recommends that Ameren Missouri consider extending these provisions
7 to residential and subdivision applications in a future rate case.
- 8 Q. Does this conclude your testimony?
- 9 A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Union)
Electric Company d/b/a Ameren Missouri for)
Approval of Efficient Electrification Program)
Case No. ET-2018-0132

AFFIDAVIT OF SARAH L.K. LANGE

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW SARAH L.K. LANGE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Rebuttal Testimony*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Sarah L.K. Lange
SARAH L.K. LANGE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 27th day of September 2018.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 12, 2020
Commission Number: 12412070

D. Suzie Mankin
Notary Public

Sarah L.K. Lange

I received my J.D. from the University of Missouri, Columbia, in 2007, and am licensed to practice law in the State of Missouri. I received my B.S. in Historic Preservation from Southeast Missouri State University, and took courses in architecture at Drury University. Since beginning my employment with the MoPSC I have taken courses in economics through Columbia College and courses in energy transmission through Bismarck State College, and have attended various trainings and seminars.

I began my employment with the Commission in May 2006 as an intern in what was then known as the General Counsel's Office. I was hired as a Legal Counsel in September 2007, and was promoted to Associate Counsel in 2009, and Senior Counsel in 2011. During that time my duties consisted of leading major rate case litigation and settlement, and presenting Staff's position to the Commission, and providing legal advice and assistance primarily in the areas of depreciation, cost of service, class cost of service, rate design, tariff issues, resource planning, accounting authority orders, construction audits, rulemakings and workshops, fuel adjustment clauses, document management and retention, and customer complaints.

In July 2013 I was hired as a Regulatory Economist III in what is now known as the Tariff and Rate Design Department. In this position my duties include providing analysis and recommendations in the areas of RTO and ISO transmission, rate design, class cost of service, tariff compliance and design, and regulatory adjustment mechanisms and tariff design. I also continue to provide legal advice and assistance regarding generating station and environmental control construction audits and electric utility regulatory depreciation. I have also participated before the Commission under the name Sarah L. Kliethermes.

Testimony and Staff Memoranda

<u>Company</u>	<u>Case No.</u>
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program	ET-2018-0132
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility	EA-2018-0202
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Subscriber Solar Program and File Associated Tariff	EA-2016-0207
The Empire District Electric Company In the Matter of The Empire District Electric Company's Revised Economic Development Rider Tariff Sheets	ET-2019-0029
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of 2017 Green Tariff	ET-2018-0063
The Empire District Electric Company In the Matter of a Proceeding Under Section 393.137 (SB 564) to Adjust the Electric Rates of The Empire District Electric Company	ER-2018-0366
Kansas City Power & Light Company KCP&L Greater Missouri Operations Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2018-0145 ER-2018-0146
Union Electric Company d/b/a Ameren Missouri In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Approval of Efficient Electrification Program	ET-2018-0132
Laclede Gas Company Laclede Gas Company d/b/a Missouri Gas Energy In the Matter of Laclede Gas Company's Request to Increase Its Revenue for Gas Service, In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenue for Gas Service.	GR-2017-0215 GR-2017-0216

<u>Company</u>	<u>Case No.</u>
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0316
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2017-0167
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	EA-2016-0358
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Annual RESRAM Tariff Filing	ET-2017-0097
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Demand Side Investment Rider Rate Adjustment And True-Up Required by 4 CSR 240-3.163(8)	ER-2016-0325
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service	ER-2016-0285
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Offer a Pilot Subscriber Solar Program and File Associated Tariff	EA-2016-0207
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2016-0179
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0156
Empire District Electric Company In the Matter of The Empire District Electric Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2016-0023

<u>Company</u>	<u>Case No.</u>
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line from Palmyra, Missouri to the Iowa Border and an Associated Substation Near Kirksville, Missouri	EA-2015-0146
Ameren Transmission Company of Illinois In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line in Marion County, Missouri and an Associated Switching Station Near Palmyra, Missouri	EA-2015-0145
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's 2nd Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	EO-2015-0055
Empire District Electric Company In the Matter of The Empire District Electric Company for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area	ER-2014-0351
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	ER-2014-0370
Union Electric Company d/b/a Ameren Missouri City of O'Fallon, Missouri, and City of Ballwin, Missouri, Complainants v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0316
Union Electric Company d/b/a Ameren Missouri In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	ER-2014-0258
Union Electric Company d/b/a Ameren Missouri Noranda Aluminum, Inc., et al., Complainants, v. Union Electric Company d/b/a Ameren Missouri, Respondent	EC-2014-0224

<u>Company</u>	<u>Case No.</u>
Grain Belt Express Clean Line, LLC In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood - Montgomery 345 kV Transmission Line	EA-2014-0207
KCP&L Great Missouri Operations Company In the Matter of KCP&L Greater Missouri Operations Company's Application for Authority to Establish a Renewable Energy Standard Rate Adjustment Mechanism	EO-2014-0151
Kansas City Power & Light Company In the Matter of Kansas City Power & Light Company's Filing for Approval of Demand-Side Programs and for Authority to Establish A Demand-Side Programs Investment Mechanism	EO-2014-0095
Veolia Energy Kansas City, Inc. In the Matter of Veolia Energy Kansas City, Inc. for Authority to File Tariffs to Increase Rates	HR-2014-0066

Presentations

Support for Low Income and Income Eligible Customers, Cost-Reflective Tariff Training, in cooperation with U.S.A.I.D. and NARUC, Addis Ababa, Ethiopia (February 23 - 26, 2016)

Fundamentals of Ratemaking at the MoPSC (October 8, 2014)

Ratemaking Basics (Sept. 14, 2012)

Participant in Missouri's Comprehensive Statewide Energy Plan working group on Energy Pricing and Rate Setting Processes.